HURRICANE AND STORM DAMAGE REDUCTION PROJECTS

DATA COLLECTION, DATA EVALUATION AND RISK ANALYSIS

THOMAS D. SMITH, P.E.

CESAJ-PD-PN

TOPICS

- Army Regulations
- Economic Issues
- Model Development
- R&D Needs
- Conclusions

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HURRICANE AND STORM DAMAGE REDUCTION

- SECTION 3 and SECTION 4
  - Types of Improvements
  - Specific Policies
  - Evaluation Framework

- APPENDIX E - Section IV
  - Specific Evaluation Framework
  - Additional Info

EVALUATION FRAMEWORK GUIDANCE REQUIREMENTS

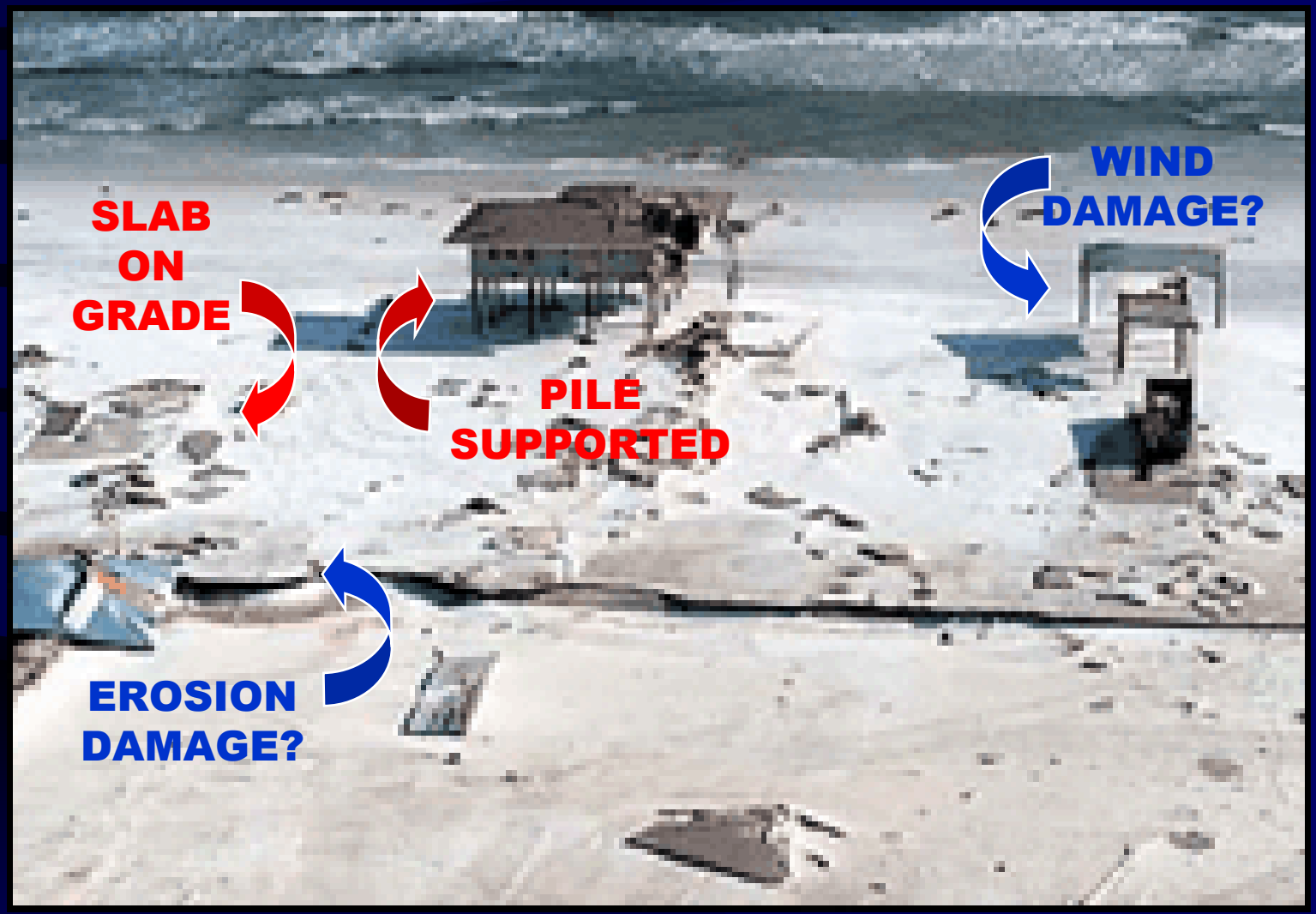
- Risk-Based Analysis
- Life-Cycle Approach
- Probabilistic Evaluation and Display of Benefits and Costs

RISK ANALYSIS KEY CONSIDERATIONS

- Storm Related Parameters
  - Wave Height
  - Wave Period
  - Surge Elevation
  - Duration
- Damage Functions
  - Erosion
  - Water Elevation
  - Waves
- Shoreline
  - Post-storm Recovery
  - Long-term Position

STORM DAMAGE ECONOMIC ISSUES

- Existing damage relationships based on
  - Anecdotal Evidence
  - Undocumented (no peer review)
  - Key to Plan Formulation
- Characterizing Input Parameters
  - Which Parameters are Significant?
  - How are Uncertainties Distributed?
  - Are there Parametric Dependencies?



Foundation Types and Damage Modes

STORM DAMAGE ECONOMIC ISSUES Key Undocumented Relationships

- Erosion Damage
  - Foundation types
  - Damage modes
- Wave Damage
  - Wave Characteristics
  - Storm Duration

STORM DAMAGE ECONOMIC ISSUES Key Undocumented Relationships (continued)

- Water Elevation Damage (Inundation)
- Wind Damage Threshold

Typical Storm Damage Scenario

Flood Insurance Program Compliance

MODEL DEVELOPMENT Update

- Existing IWR Work Unit
  - Conceptual Model Design Document Complete
  - Database Design Complete
- FY02 Milestones
  - IWR/CHL: Shoreline Response Database
  - Proof of Concept Model: April 2002
  - Prototype Model: June 2002

MODEL DEVELOPMENT Update (continued)

- Field Data Collection
  - Limited Existing Data
  - Structure Damage
  - Inundation Damage
- Draft Scope of Work Complete
  - Limited Funding Available
  - Data Evaluation also Required

MODEL DEVELOPMENT Update (continued)

- Expert Elicitation Protocol
  - Similar to Riverine Flood Damage
  - Damage Function Verification
- Damage Threshold
  - Waves versus Wind
  - Structure and Contents

CONCLUSIONS

- Risked-Based Life Cycle Analysis Required
- Unfunded Requirements
  - Field Data Collection and Evaluation
  - Benefit Analysis Model
  - Cost Estimating Model
- Models are Critical to Mission Success
- Long-term Funding Needed

THANK YOU


THE
END